

CLAIMS:

1. An optical scanning device for scanning an information layer of an optical record carrier, the device comprising a radiation source for generating a radiation beam, an objective system for converging the radiation beam on the information layer, and an optical filter for regulating the intensity profile of the radiation beam, the filter having an optical axis and comprising a saturable absorber having an absorption that saturates at a threshold incident radiation intensity, the absorption of the absorber decreasing with distance away from the axis for incident radiation beams of intensity less than the threshold.
2. A device as claimed in claim 1, wherein the saturable absorber is formed in a layer extending substantially perpendicular to the optical axis.
3. A device as claimed in claim 2, wherein said layer is of non-uniform thickness, the thickness of the layer decreasing with distance away from the optical axis.
4. A device as claimed in claim 1, wherein the radiation source is arranged to generate a radiation beam at a first intensity less than said threshold for reading information from the optical record carrier, and a radiation beam at a second intensity greater than said threshold for writing information to said optical record carrier.
5. A device as claimed in claim 1, wherein the optical filter is arranged to have a substantially uniform absorption profile at at least one incident radiation intensity greater than said threshold.
6. A device as claimed in claim 5, wherein said at least one beam intensity corresponds to the intensity of a radiation beam suitable for writing information to the optical record carrier.
7. A device as claimed in claim 5, wherein the filter further comprises a layer of absorber that is not saturated at said at least one intensity.

8. An optical filter for regulating the intensity profile of a radiation beam, the filter having an optical axis and comprising a saturable absorber having an absorption that saturates at a threshold incident radiation intensity, the absorber having an absorption that decreases with distance away from the optical axis for incident radiation beams of intensity less than the threshold.

9. A method for manufacturing an optical filter for regulating the intensity profile of a radiation beam, the filter having an optical axis and comprising a saturable absorber having an absorption that saturates at a threshold incident radiation intensity, the absorber having an absorption that decreases with distance away from the optical axis for incident radiation beams of intensity less than the threshold, the method comprising the step of:
10 forming a non-uniform layer of saturable absorber upon a transparent substrate.

15 10. A method as claimed in claim 9, wherein said layer is non-uniform in at least one of thickness and density.

11. A method of manufacturing an optical scanning device for scanning an information layer of an optical record carrier, the method comprising the steps of:
20 providing a radiation source for generating a radiation beam;
providing a lens system for converging the radiation beam on the information layer; and
providing an optical filter or regulating the intensity profile of the radiation beam, the filter having an optical axis and comprising a saturable absorber having an absorption that saturates at a threshold incident radiation intensity, the absorption of the absorber decreasing with distance away from the axis for incident radiation beams of intensity less than the threshold.

30 12. A method for regulating the intensity profile of a radiation beam using a filter having an optical axis and comprising a saturable absorber having an absorption that saturates at a threshold incident radiation intensity, the absorber having an absorption that decreases with distance away from the optical axis for incident radiation beams of intensity less than the threshold.